Voluntary Remediation Program (VRP) | (307) 777-7752 | http://deq.state.wy.us/volremedi/index.asp

Institutional Controls, Engineering Controls, and Use Control Areas

In its 2000 session, the Wyoming Legislature created new opportunities, procedures, and standards for voluntary remediation of contaminated sites. These provisions, enacted as Articles 16, 17, and 18 of the Wyoming Environmental Quality Act and implemented by the Wyoming Department of Environmental Quality (DEQ), will govern future environmental cleanups in Wyoming.

This Fact Sheet addresses the use of institutional controls and use control areas as potential components of the voluntary cleanup process within the Voluntary Remediation Program (VRP).

1. What are institutional controls?

Institutional controls are legal or administrative measures that limit human exposure to hazardous waste or hazardous constituents. Examples include use control areas, easements, zoning restrictions, and deed notices. They are intended to bolster the integrity of remedies and minimize the potential exposure to contamination by limiting land or resource use.

Institutional controls are typically used any time contaminants are left in place at cleanup levels that are based on restricted site uses. In addition, institutional controls may be required during implementation of a remedy that will eventually achieve unrestricted site use cleanup levels but will take a long time, for example, for sites undergoing long term groundwater remediation and sites where a monitored natural attenuation remedy is approved. Institutional controls are generally used in conjunction with, rather than in lieu of, engineering measures, such as waste treatment or containment.

2. What types of remedies typically trigger the need for institutional controls?

Some remedy options that are known to typically need institutional controls include, but are not limited to:

- Capping waste in place.
- Construction of containment facilities.
- Monitored natural attenuation.
- Long term groundwater treatment or containment remedies.

3. What are the different types of institutional controls?

There are four categories of institutional controls: governmental controls, proprietary controls, enforcement and permit tools, and informational devices. A site may have a single institutional control applied to it, or multiple institutional controls from various categories may be applied to enhance the protectiveness of the remedy.

Governmental controls. Governmental controls are based on State or local authorities that restrict property use. Examples include restrictions on the use of land and water, use control area, zoning restrictions, ordinances, statutes, and building permits.

Proprietary controls. These controls, such as easements and covenants, have their basis in real property law and generally create legal property interests. Proprietary controls involve legal instruments placed in the chain of title of the property. The instrument may include the conveyance of a property interest from the owner to a second party for the purpose of restricting land or resource use. An example of this type of control is an easement that provides access rights to a property so the site owner/operator or regulatory agency may inspect and monitor.

Enforcement and permit tools with institutional control components. Remedy agreements, administrative orders, consent decrees, and permit conditions may be used to require and ensure long term compliance with site use restrictions when the restrictions are specified in the agreement, order, or other enforcement or permit document.

Informational devices. While not strictly a control, informational devices such as deed notices can provide information or notification that residual or capped contamination may remain on site.

4. What are engineering controls?

Engineering controls are measures, such as capping, containment, slurry walls, extraction wells, or treatment methods that are capable of managing environmental and health risks by reducing contamination levels or limiting exposure pathways.

5. What is the difference between engineering controls and institutional controls?

Engineering controls (ECs) encompass a variety of engineered remedies (e.g., soil capping, fences) to contain and/or reduce exposure to contamination and/or physical barriers intended to limit access to property. In contrast, institutional controls (ICs) are a variety of administrative or legal devices (e.g., use control areas, deed restrictions/notices, covenants) imposed to ensure that the ECs stay in place or, where there are no ECs, to ensure the restrictions on land use stay in place.

6. What is the process for selecting institutional and/or engineering controls and putting them in place?

Often times ICs and ECs are used together. The need for ICs and/or ECs will be identified as part of selecting a remedy. As discussed in the answer to question #2 above, only certain types of

remedies will need institutional controls, and, of those, different remedial approaches will require different types of institutional control approaches.

For soil, DEQ's ability to approve remedies that involve cleanup to restricted site use cleanup levels or leaving waste in place is limited under the VRP cleanup law. Even when a remedy that would need institutional controls could be approved, DEQ's preference is for remedies that are more permanent, have fewer operation and maintenance burdens, and, therefore, rely less on institutional controls.

Even though Wyoming law requires groundwater to be cleaned up to unrestricted use levels, the DEQ realizes that long term groundwater corrective action will require institutional controls for the duration of the cleanup.

Through the remedy selection process described in Fact Sheet #21 *Remedy Selection,* DEQ will consider the expected life cycle performance of any engineering controls, monitoring systems, and institutional controls. The institutional controls to be applied at a site are then described in the remedial action plan, which is part of the remedy agreement for the site. No changes to institutional or engineering controls contained in a remedy agreement can be made without the prior written consent of DEQ.

7. Is public notice or a public comment period required before institutional controls can be implemented?

As with other aspects of the proposed remedy, the public has the opportunity to comment on the proposed institutional control component of the remedy during the public comment period. (Please see Fact Sheet #2 *Public Participation*).

8. What are use control areas?

Use control areas are sites where soil contamination remains in place after cleanup, requiring that use of the property be restricted over the long term. Cleanup levels for use control areas, while remaining protective, are not as rigorous as the levels used for sites with unrestricted use.

Except in the case when a determination of technical impracticability has been made, an approved use control area must be in place before DEQ can enter into a remedy agreement that includes reliance on long term site use restrictions. At sites where a determination of technical impracticability has been made (see § 35-11-1605(d)), the site may, but is not required to be, designated as a use control area.

9. Would institutional controls and/or engineering controls be used in use control areas?

Institutional controls and/or engineering controls are typically required at sites designated as use control areas. The controls are used as part of the facility's cleanup program to minimize exposure by restricting use where soil contamination remains on or near the surface. At sites where a determination of technical impracticability has been made (see § 35-11-1605(d)), institutional

controls and/or engineering controls are also likely to be required to protect people from contamination over the long term.

Use restrictions, as with other terms and conditions set forth in a remedy agreement, run with the land and are binding upon successors in interest. A violation of any use restriction, as with any term or condition of a remedy agreement or certificate of completion, will be deemed a violation of the Wyoming Environmental Quality Act, and DEQ may bring an action for such violation against the owner of the site at the time the violation occurs or against the person who commits the violation.

10. How is a use control area established?

The owner of a site who proposes long term restrictions on the use of the site petitions to the appropriate governmental entity or entities for the creation of a use control area to establish long term restrictions on the use of the site. The petition to establish a use control area must contain data, information, and any remedy options required in a preliminary remediation agreement under §35-11-1606, including a comparison to cleanup to standards for unrestricted use. The site owner must give written notice of the petition to all surface owners of record of land contiguous to the site and publish notice of the petition and a public hearing once per week for four consecutive weeks in a newspaper or newspapers of general circulation in the county in which the site is located.

The notice shall identify the property, generally describe the petition and proposed use restrictions, direct that comments may be submitted to the governmental entity or entities to whom the petition has been submitted, and provide the date, time, and place of the public hearing. The public hearing shall be held no sooner than thirty days after the first publication of the notice. After the public hearing has been held, the governing board, commission or council shall vote on the creation of the use control area in accordance with applicable rules, regulations, and procedures. The governmental entity to which the use control area petition was submitted shall approve or deny an owner's petition for a use control area within one hundred eighty days after the petition is received. (For additional information on this process, please see § 35-11-1609).

11. How can I get more information about the VRP?

To learn about VRP sites that may exist in your community, to obtain copies of other VRP Fact Sheets/guidance documents, get answers to your questions, or volunteer for the program, contact DEQ at (307) 777-7752 or through the VRP website at: http://deq.state.wy.us/volremedi/index.asp.

The VRP website includes all of the Fact Sheets and other guidance documents for the VRP. This website is updated frequently and includes the latest information about DEQ's progress in developing guidance, policy, and other supporting documents for the VRP.

12. References

For additional information regarding institutional controls, the Volunteer is referred to the following documents.

USEPA Fact Sheet. *Institutional Controls: A Site Manager's Guide to Identifying, Evaluating, and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups*. Office of Solid Waste and Emergency Response. EPA 540-F-00-005, OSWER 9355.0-74FS-P. September 2000. Available at: http://www.epa.gov/superfund/action/ic/guide/guide.pdf

USEPA. *Use of Institutional Controls in the RCRA Corrective Action Program*. Region 5 Waste, Pesticides, and Toxics Division. March 2000. Available at: http://www.epa.gov/reg5oopa/rcraca/Institutional_Controls_Guidance.PDF